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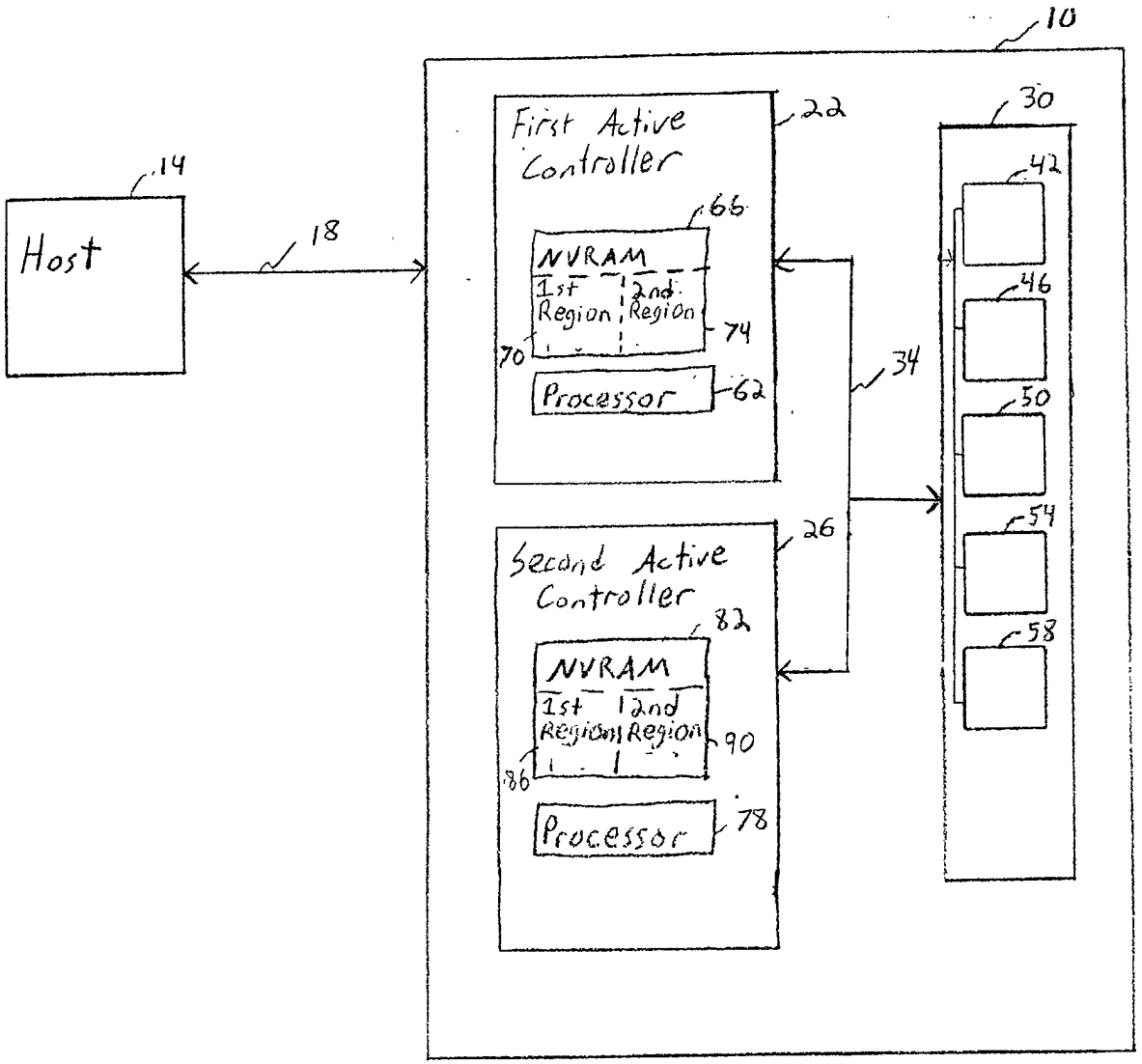

Fig. 1 (Prior Art)

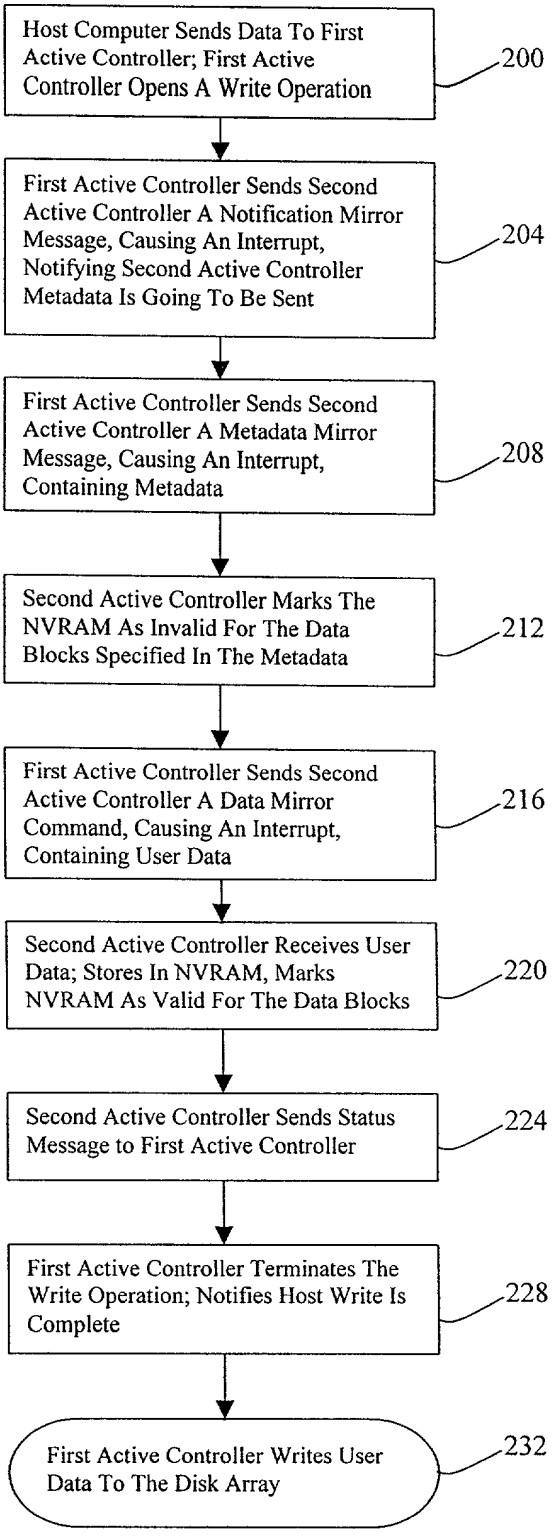

Fig. 2 (Prior Art)

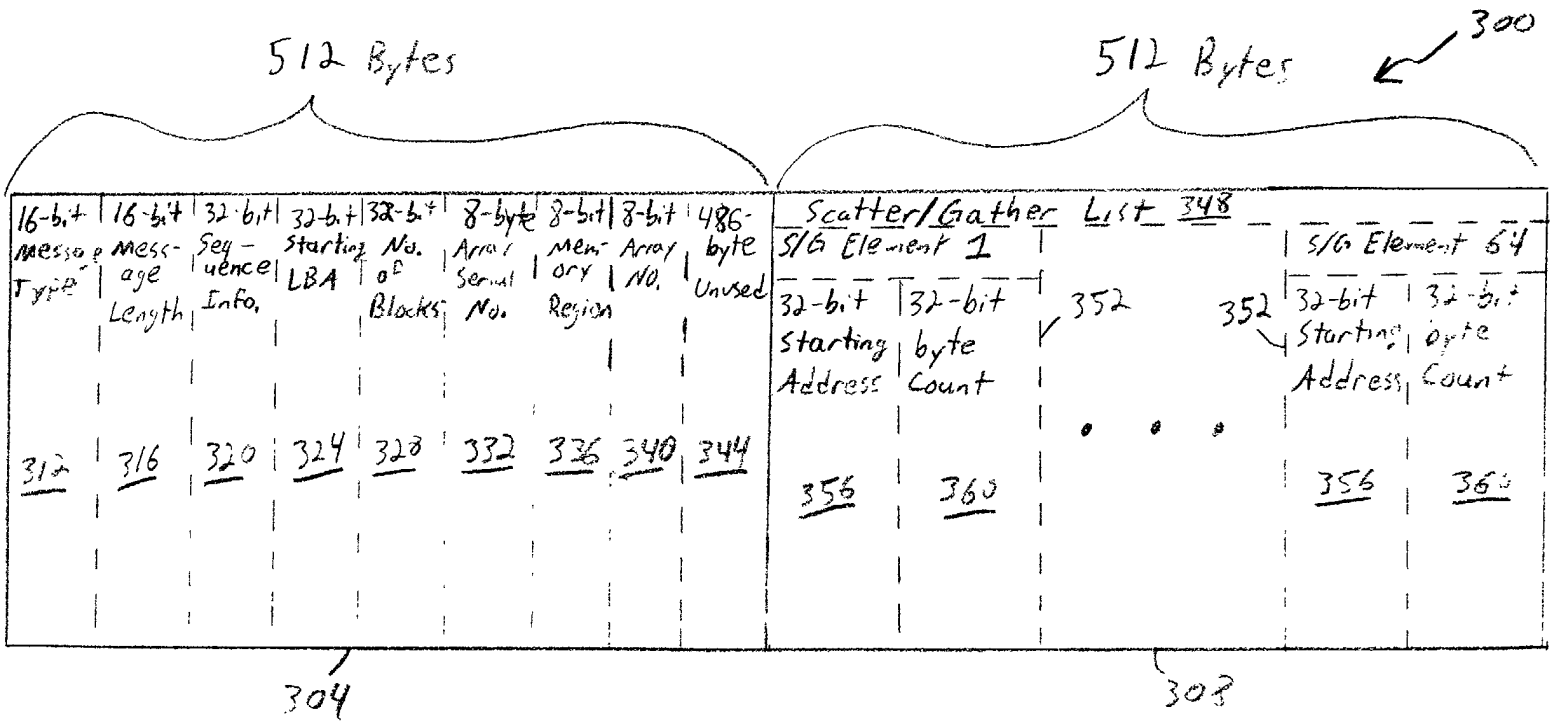

Fig. 3 (Prior Art)

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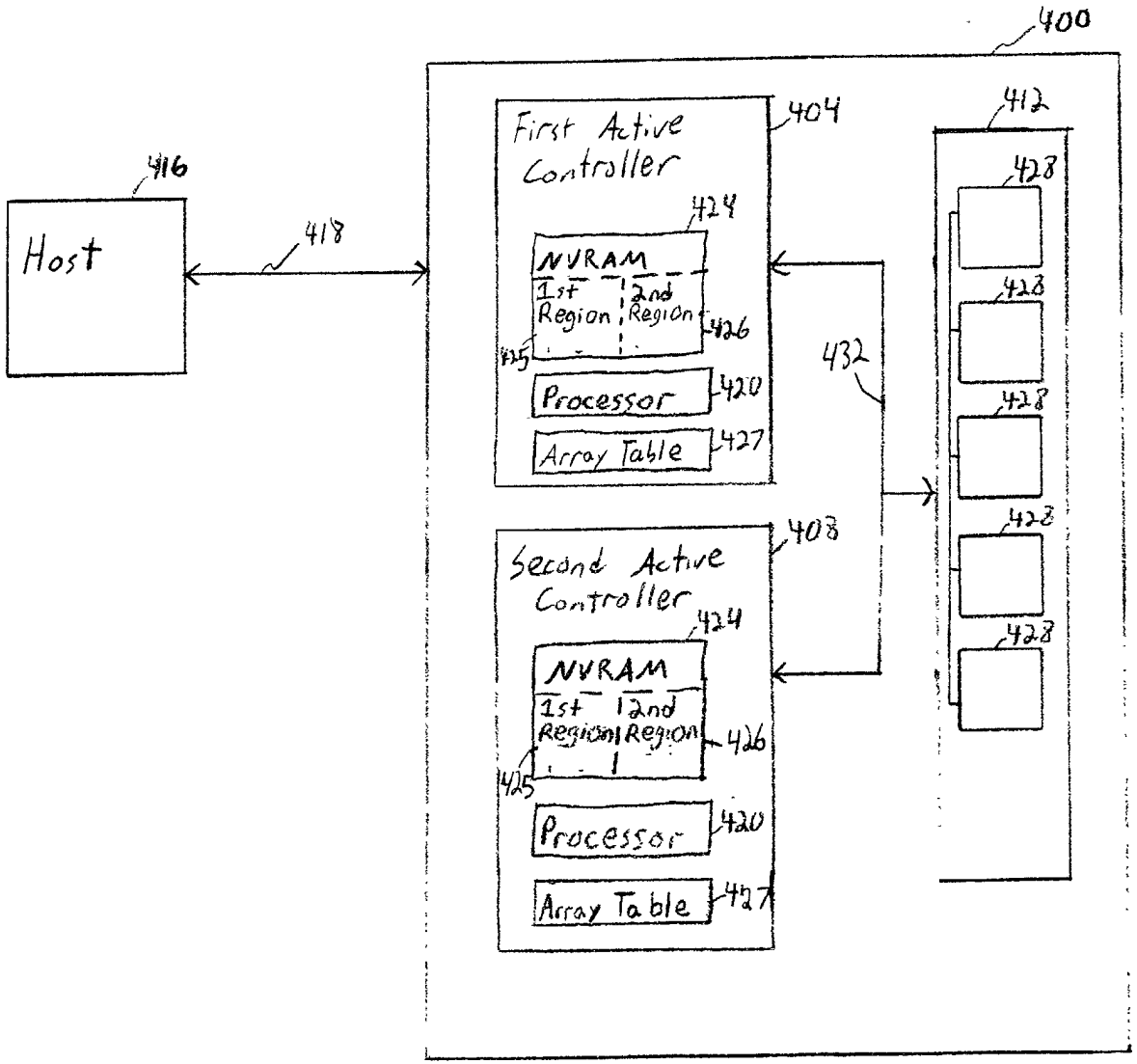

Fig. 4

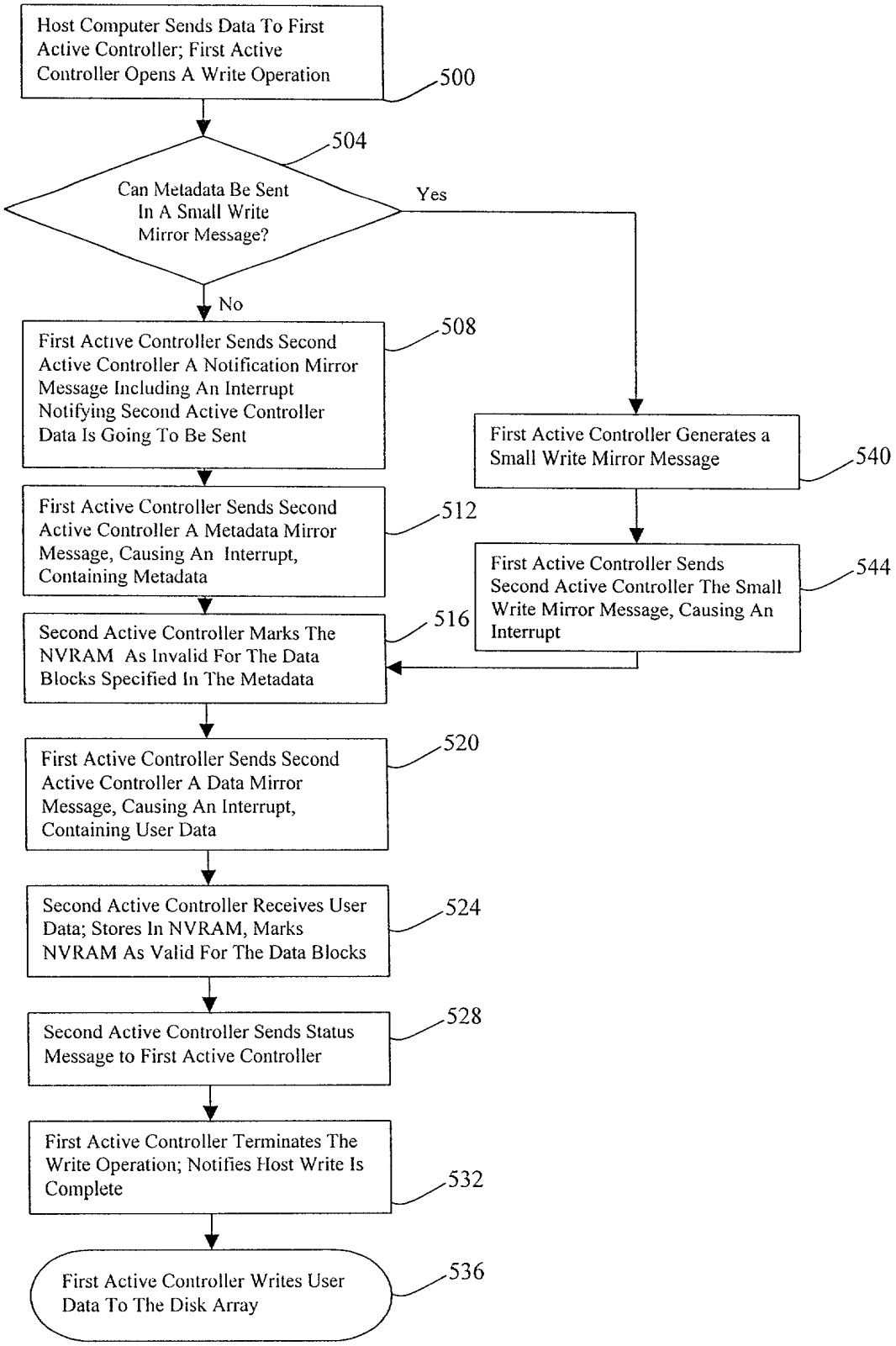
Host Computer Sends Data To First Active Controller; First Active Controller Opens A Write Operation
500
504
Can Metadata Be Sent In A Small Write Mirror Message?
Yes
No
First Active Controller Sends Second Active Controller A Notification Mirror Message Including An Interrupt Notifying Second Active Controller Data Is Going To Be Sent
508
First Active Controller Sends Second Active Controller A Metadata Mirror Message, Causing An Interrupt, Containing Metadata
512
Second Active Controller Marks The NVRAM As Invalid For The Data Blocks Specified In The Metadata
516
First Active Controller Sends Second Active Controller A Data Mirror Message, Causing An Interrupt, Containing User Data
520
Second Active Controller Receives User Data; Stores In NVRAM, Marks NVRAM As Valid For The Data Blocks
524
Second Active Controller Sends Status Message to First Active Controller
528
First Active Controller Terminates The Write Operation; Notifies Host Write Is Complete
532
First Active Controller Writes User Data To The Disk Array
536
First Active Controller Generates a Small Write Mirror Message
540
First Active Controller Sends Second Active Controller The Small Write Mirror Message, Causing An Interrupt
544

Fig. 5

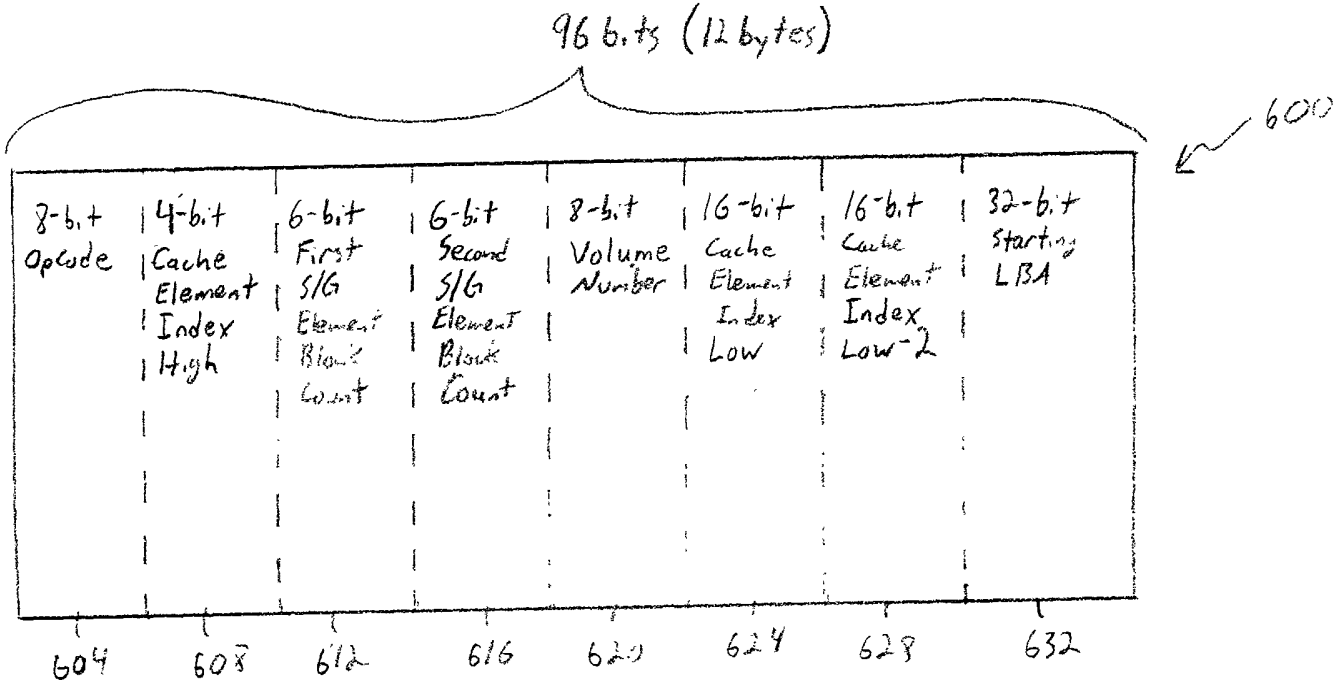
96 bits (12 bytes)
600
8-bit Opcode
4-bit Cache Element Index High
6-bit First S/G Element Block Count
6-bit Second S/G Element Block Count
8-bit Volume Number
16-bit Cache Element Index Low
16-bit Cache Element Index Low-2
32-bit Starting LBA
604
608
612
616
620
624
628
632

Fig. 6

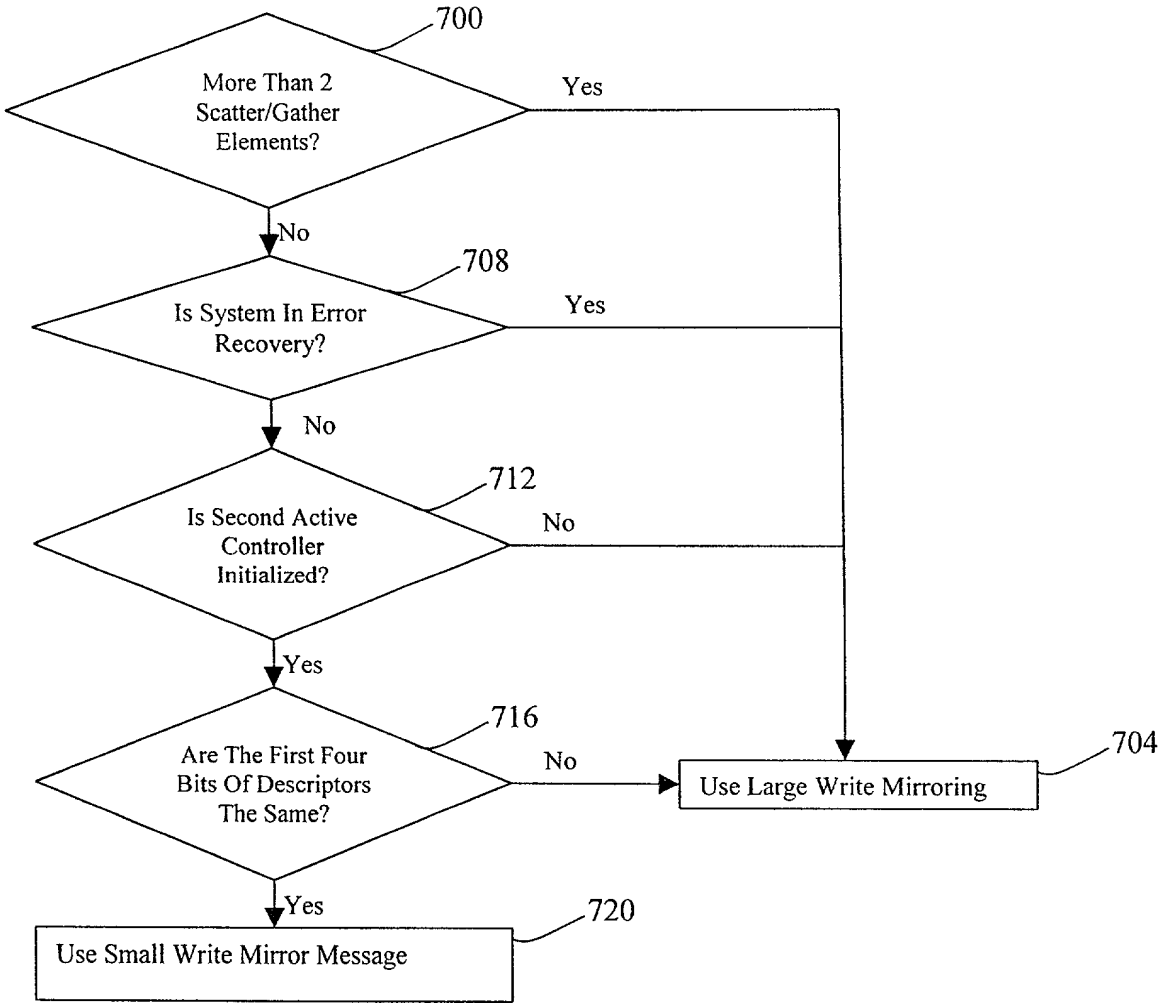
700
More Than 2 Scatter/Gather Elements?
Yes
No
708
Is System In Error Recovery?
Yes
No
712
Is Second Active Controller Initialized?
No
Yes
716
Are The First Four Bits Of Descriptors The Same?
No
704
Use Large Write Mirroring
Yes
720
Use Small Write Mirror Message

Fig. 7